

VICINITY MAP KEY MAP NO. 336 G, 336 H, 336 L, AND 336M

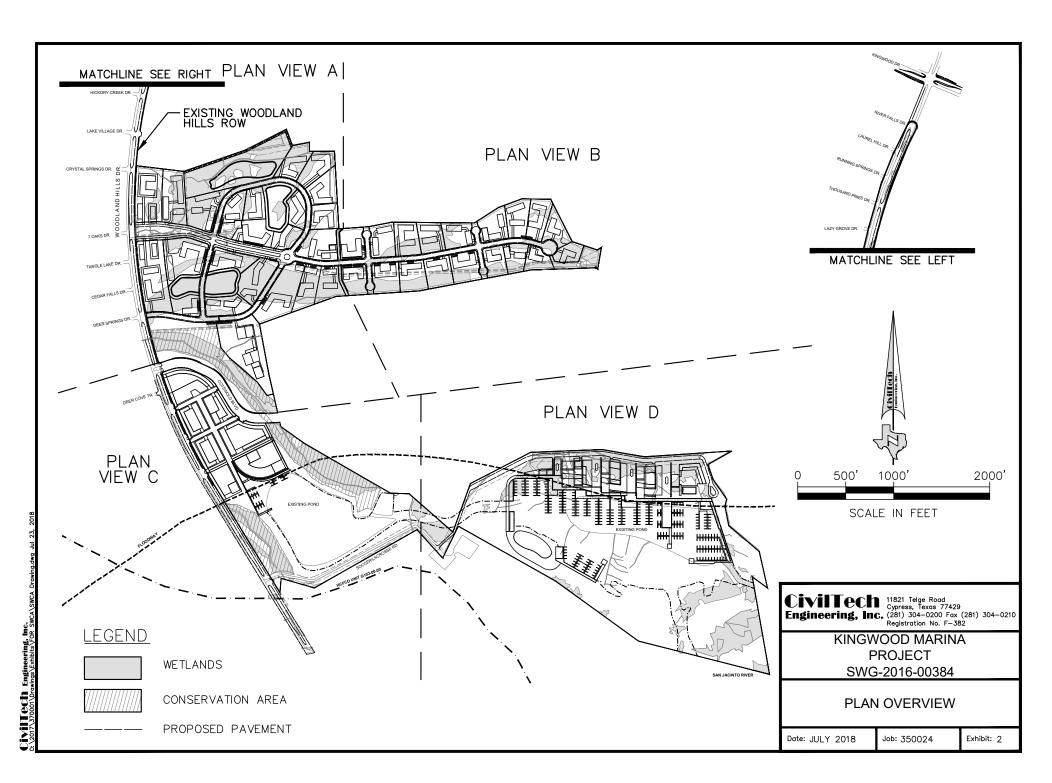
CIVILLECH 11821 Telge Road Cypress, Texas 77429
Engineering, Inc. (281) 304–0200 Fax (281) 304–0210
Registration No. F–382

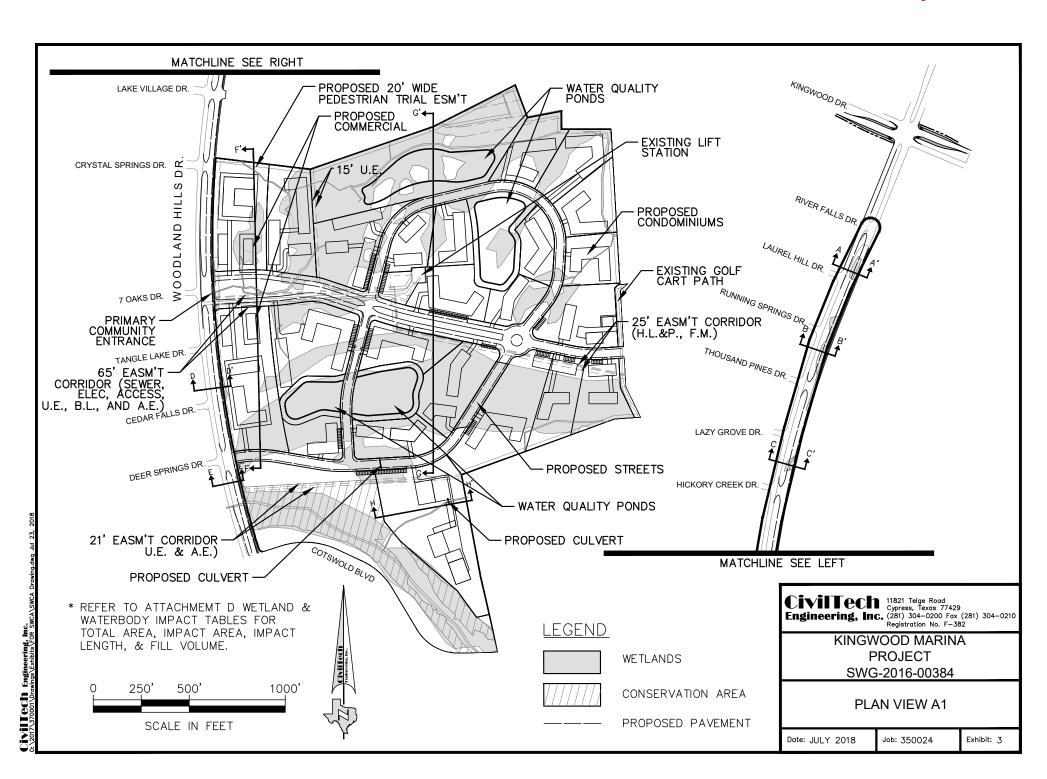
KINGWOOD MARINA **PROJECT** SWG-2016-00384

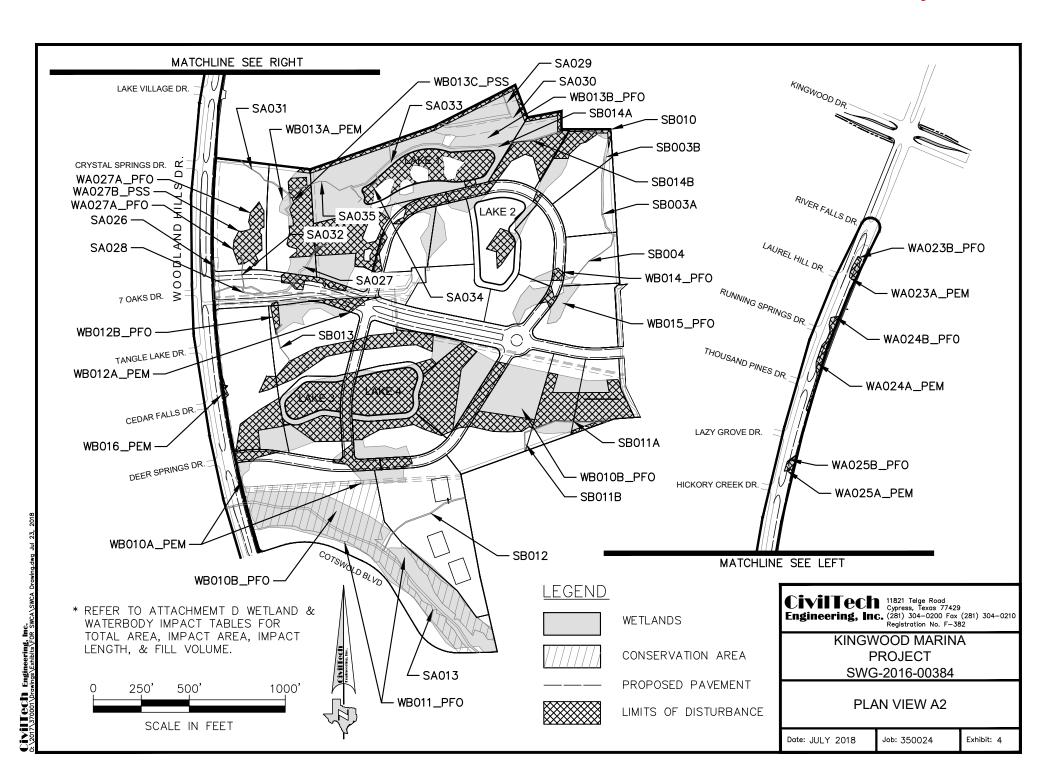
VICINITY MAP

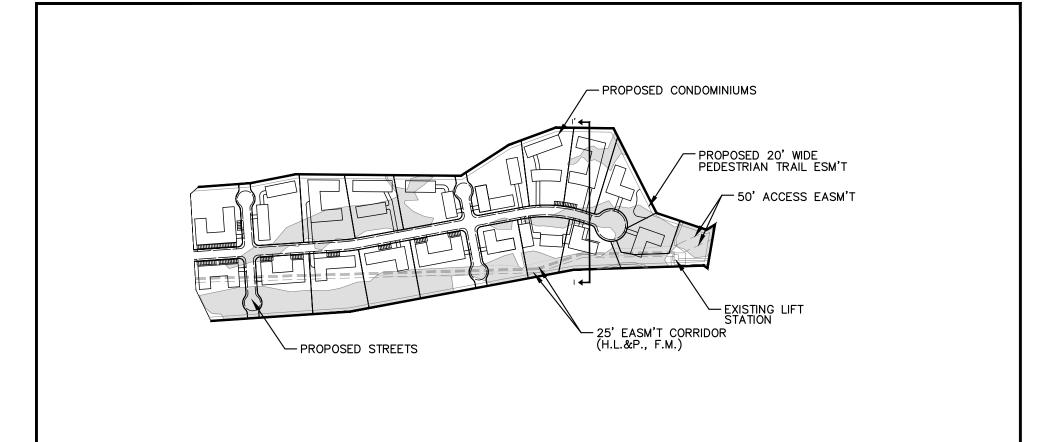
Date: JULY 2018

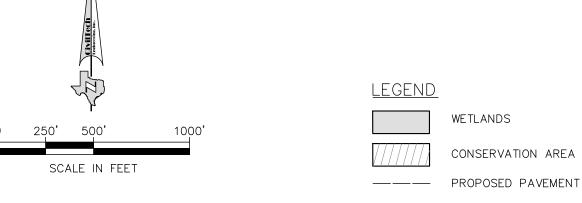
Job: 350024











\* REFER TO ATTACHMEMT D WETLAND & WATERBODY IMPACT TABLES FOR TOTAL AREA, IMPACT AREA, IMPACT LENGTH, & FILL VOLUME.

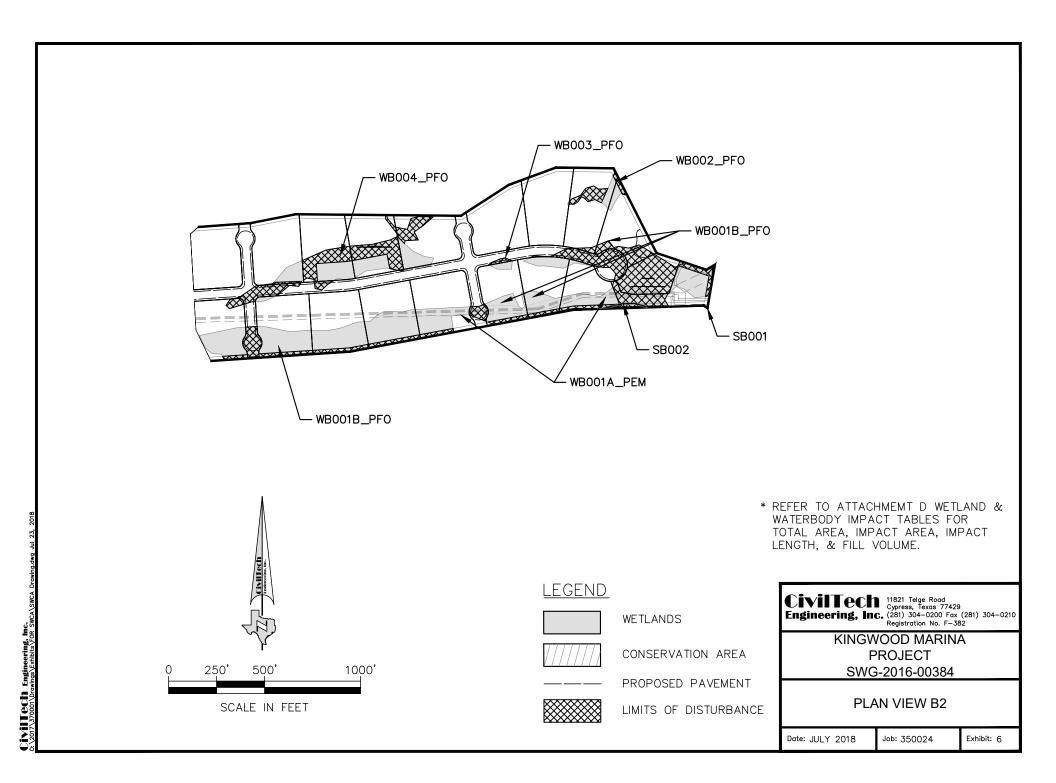
CivilTech 11821 Telge Road Cypress, Texas 77429
Engineering, Inc. (281) 304-0200 Fax (281) 304-0210 Registration No. F-382

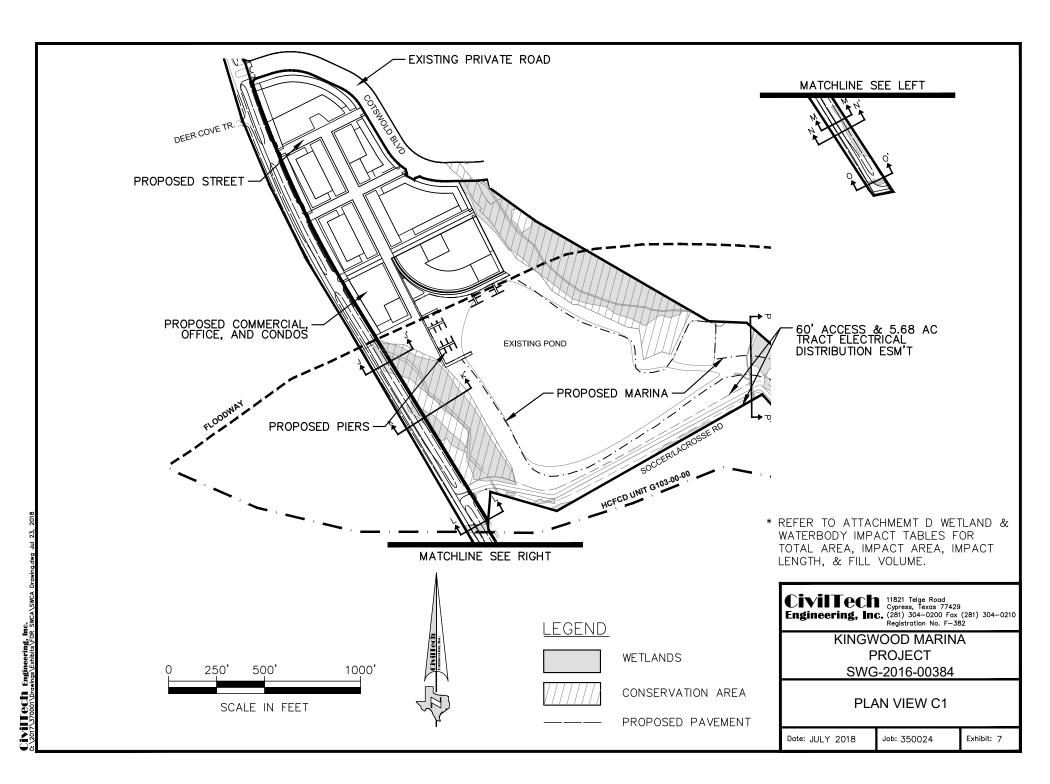
KINGWOOD MARINA **PROJECT** SWG-2016-00384

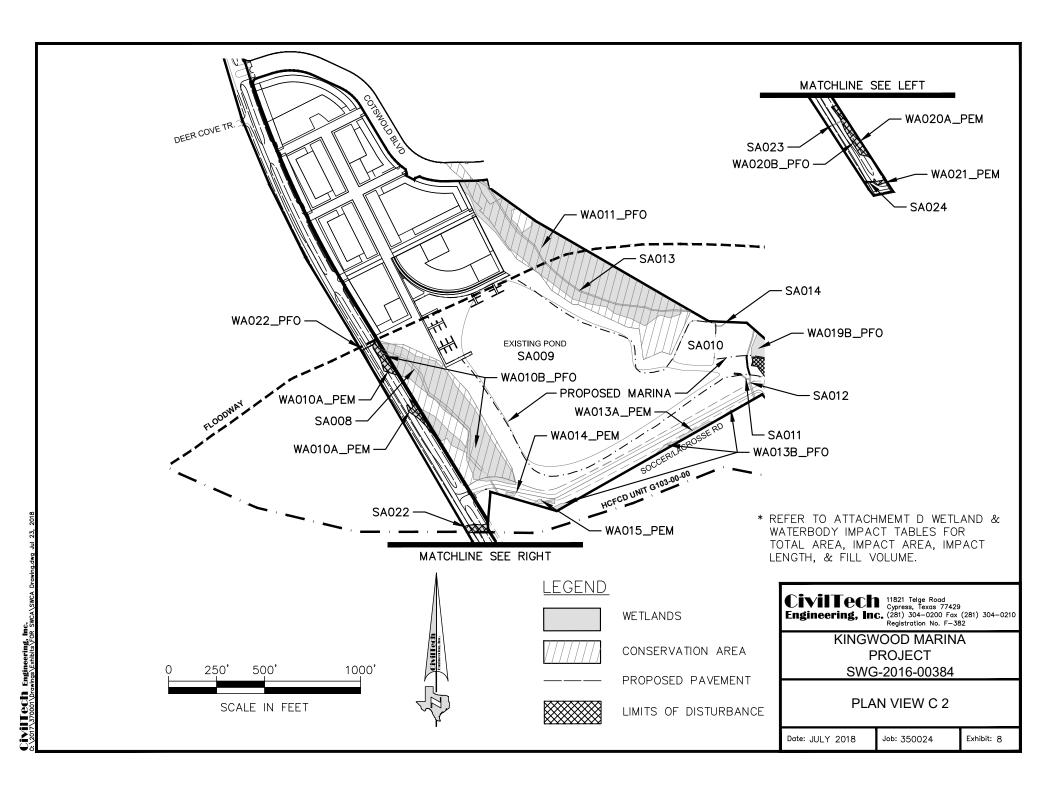
PLAN VIEW B1

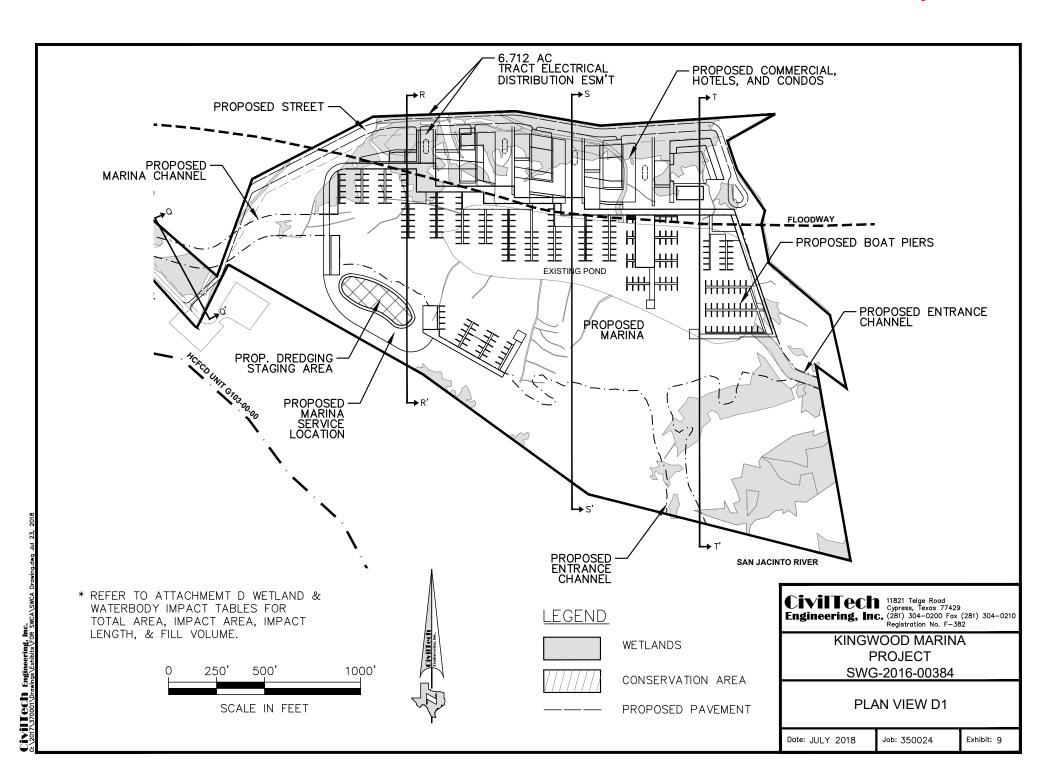
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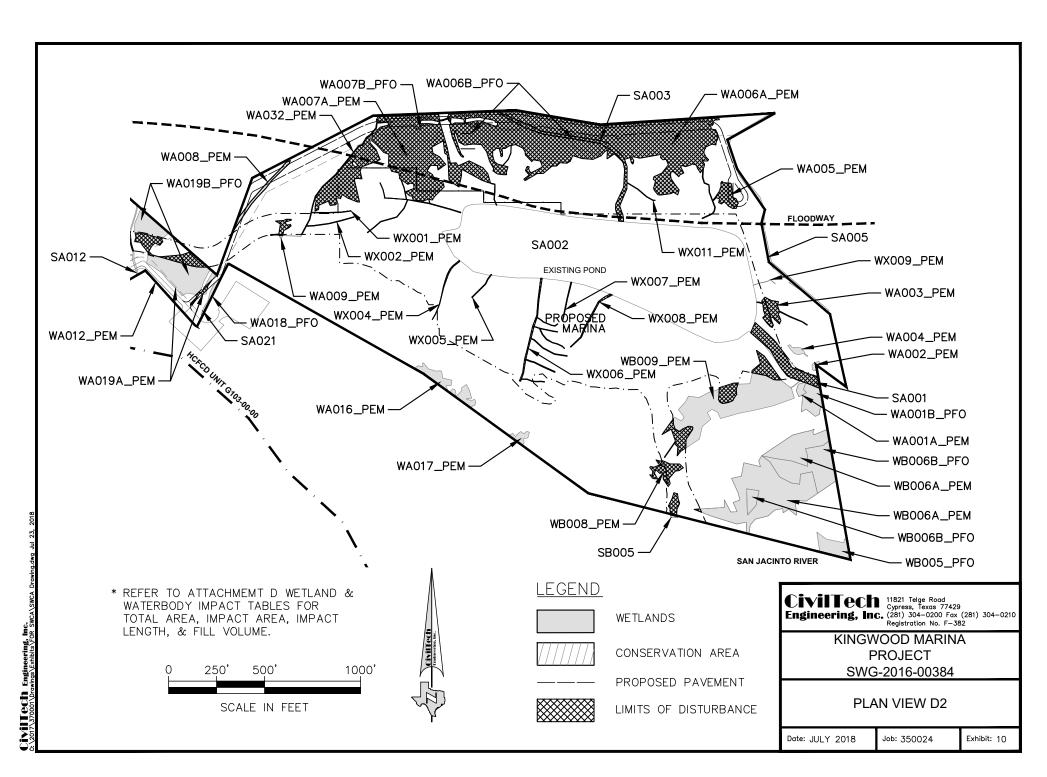
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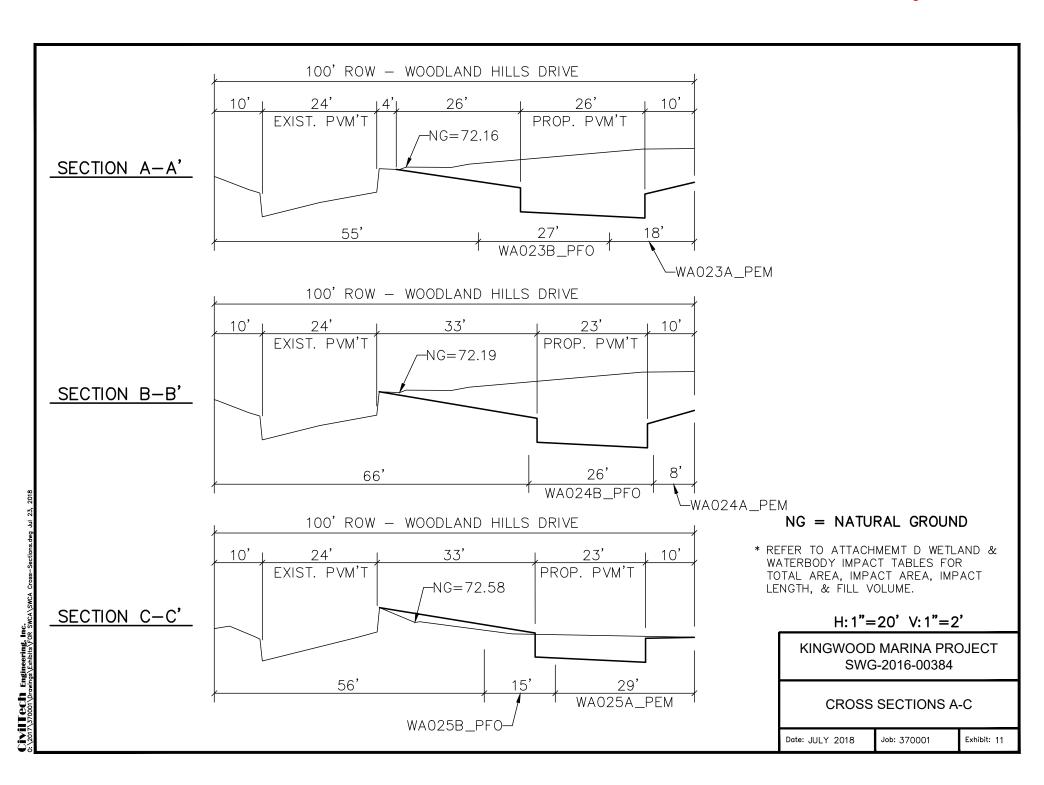


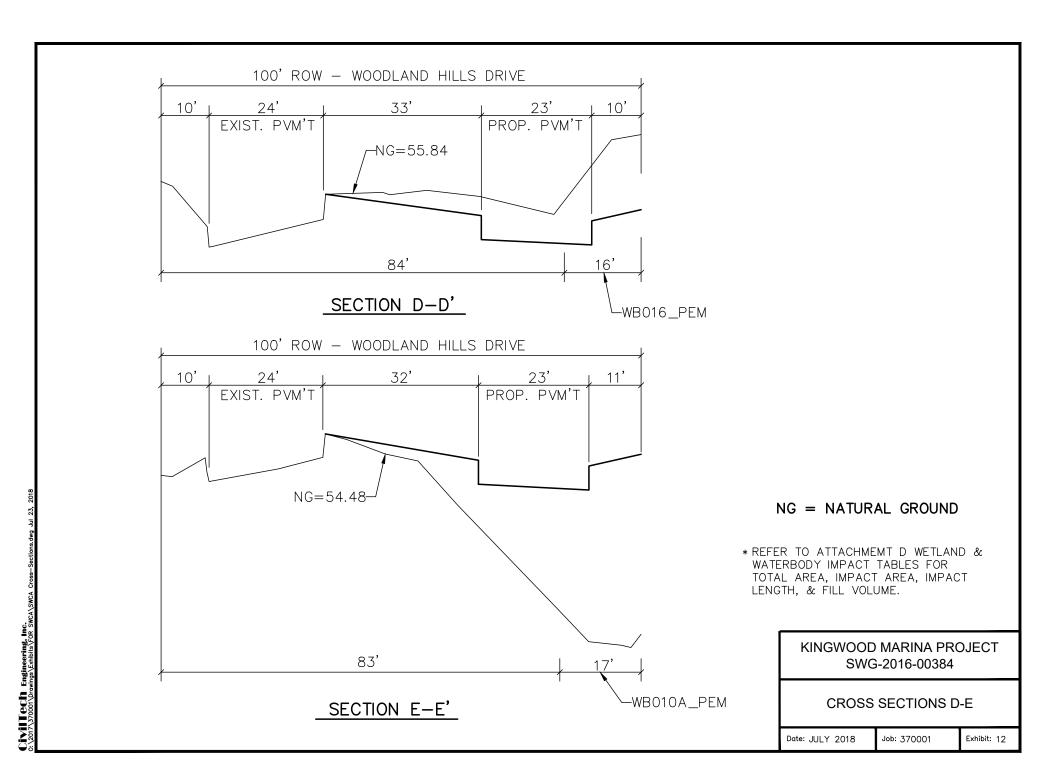


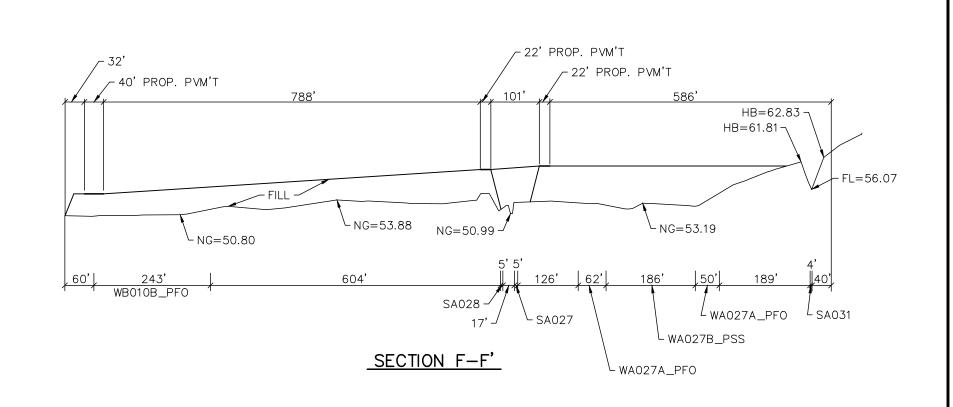












HB = HIGH BANK

FL = FLOWLINE

NG = NATURAL GROUND

H:1"=200' V:1"=2'

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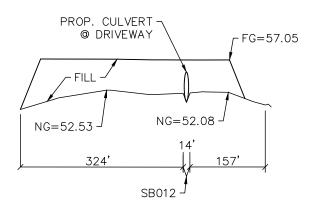
**CROSS SECTION F** 

WATERBODY IMPACT TABLES FOR TOTAL AREA, IMPACT AREA, IMPACT LENGTH, & FILL VOLUME.

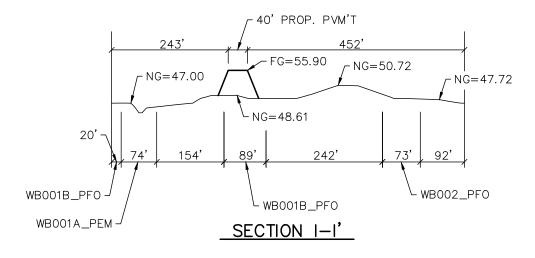
\* REFER TO ATTACHMEMT D WETLAND &

Date: JULY 2018

Job: 370001



## SECTION H-H'



\* REFER TO ATTACHMEMT D WETLAND & WATERBODY IMPACT TABLES FOR TOTAL AREA, IMPACT AREA, IMPACT LENGTH, & FILL VOLUME.

FG = FINISHED GRADE

NG = NATURAL GROUND

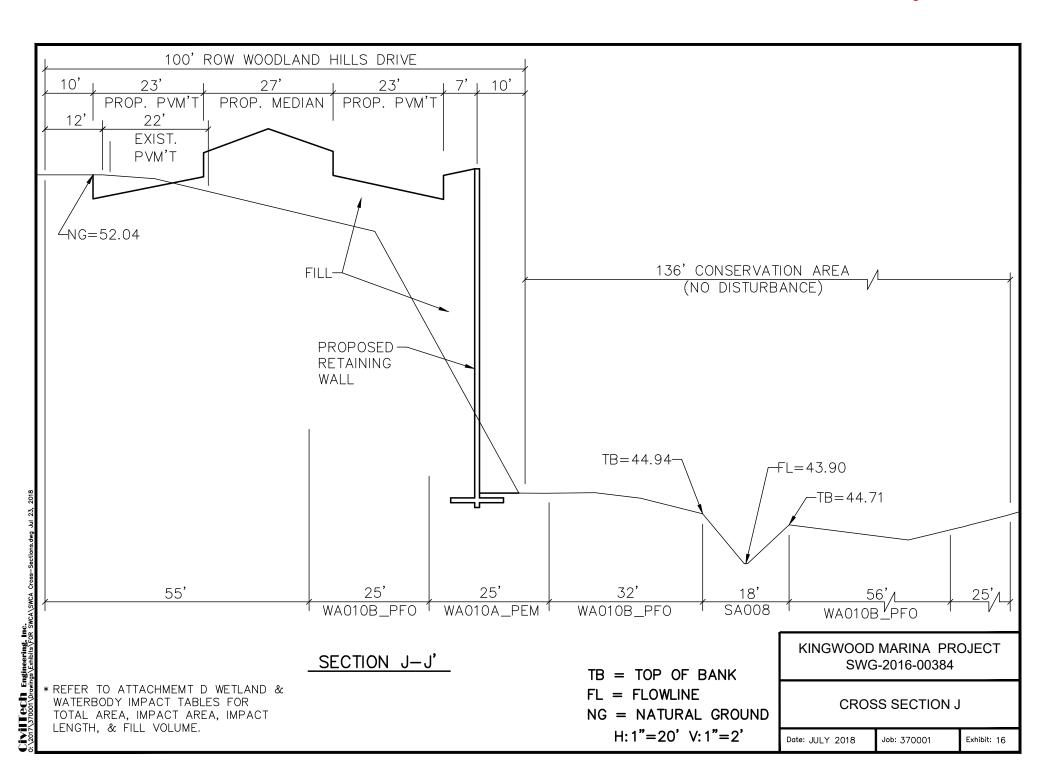
H:1"=200' V:1"=2'

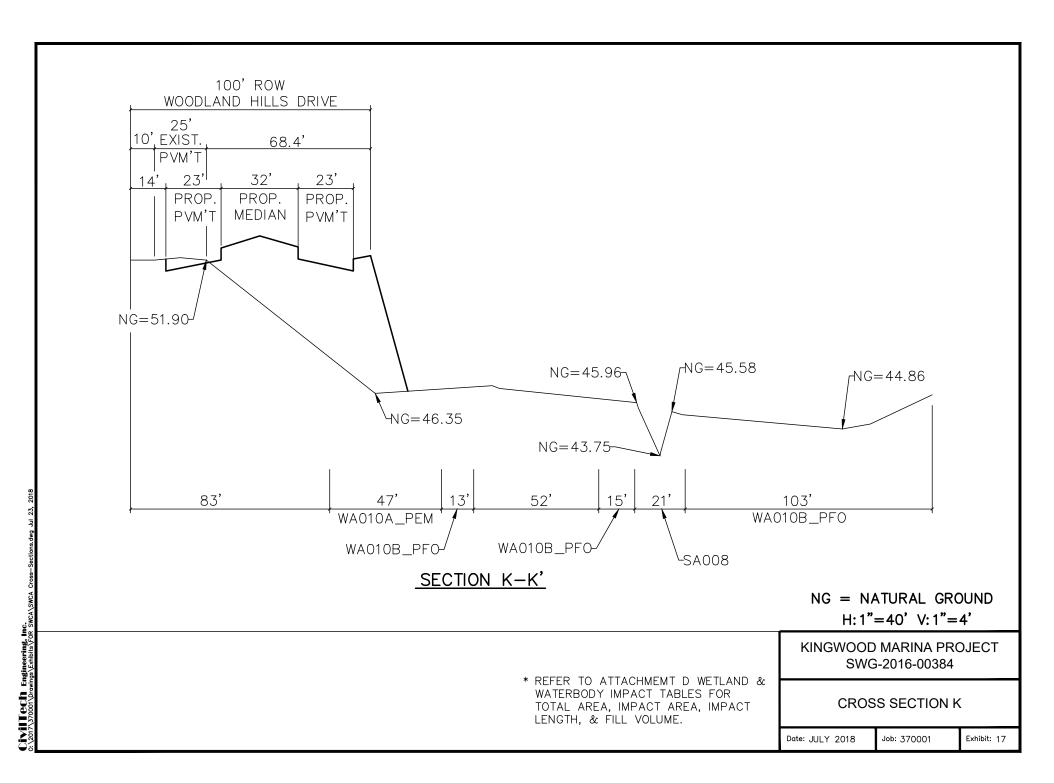
KINGWOOD MARINA PROJECT SWG-2016-00384

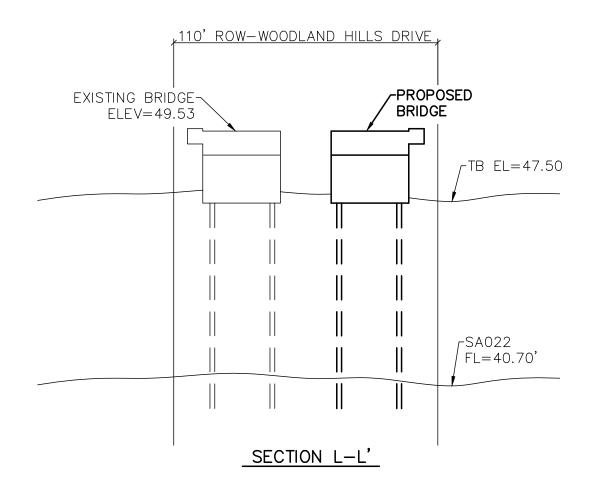
**CROSS SECTION H-I** 

Date: JULY 2018

Job: 370001







NO NEED TO GET INTO THE CREEK TO BUILD THE BRIDGE. ONE HALF OF THE ROADWAY (TWO LANES) ALREADY EXISTS SO YOU HAVE ACCESS TO THE SOUTH BANK BY CROSSING THE STREAM. THE WIDTH OF THE STREAM IS NARROW ENOUGH THAT YOU CAN HAVE A SINGLE SPAN STRUCTURE. WITH A SINGLE SPAN YOU WILL CONSTRUCT THE ABUTMENTS AT THE TOP OF THE BANK EDGES. SINCE THERE IS AN EXISTING ROADWAY YOU SHOULD BE ABLE TO SET ANY BEAMS WITHOUT GETTING IN THE STREAM.

\* REFER TO ATTACHMEMT D WETLAND & WATERBODY IMPACT TABLES FOR TOTAL AREA, IMPACT AREA, IMPACT LENGTH, & FILL VOLUME.

TB = TOP OF BANK

FL = FLOWLINE

NG = NATURAL GROUND

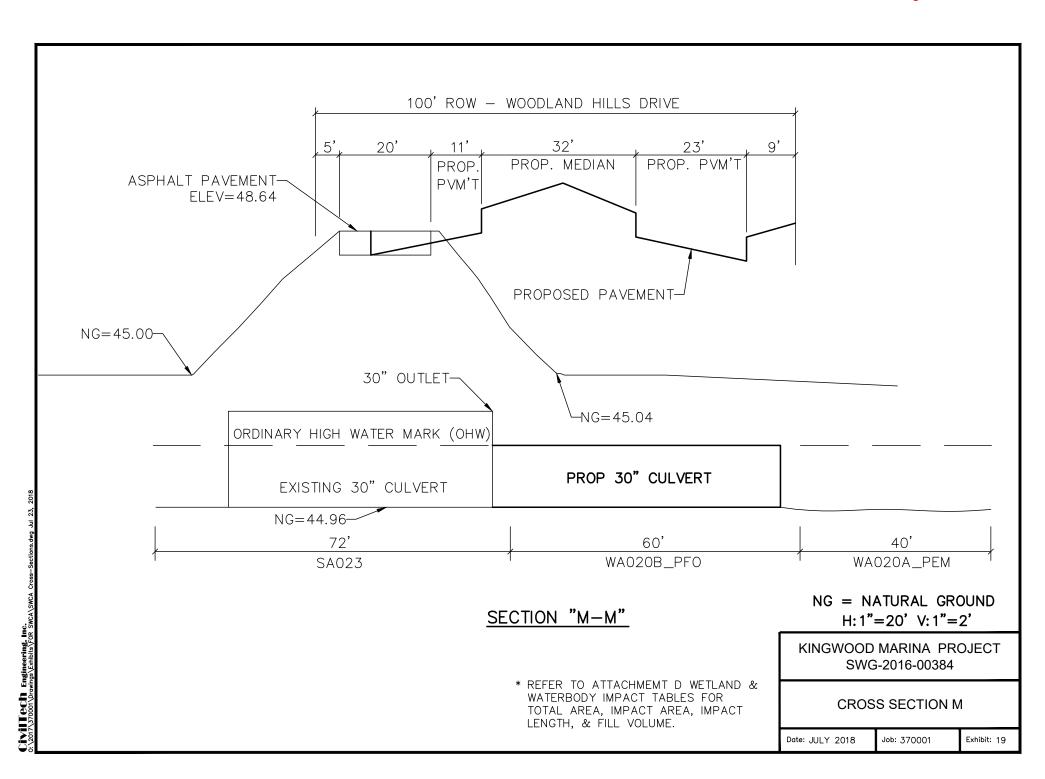
H: 1"=40' V: 1"=4'

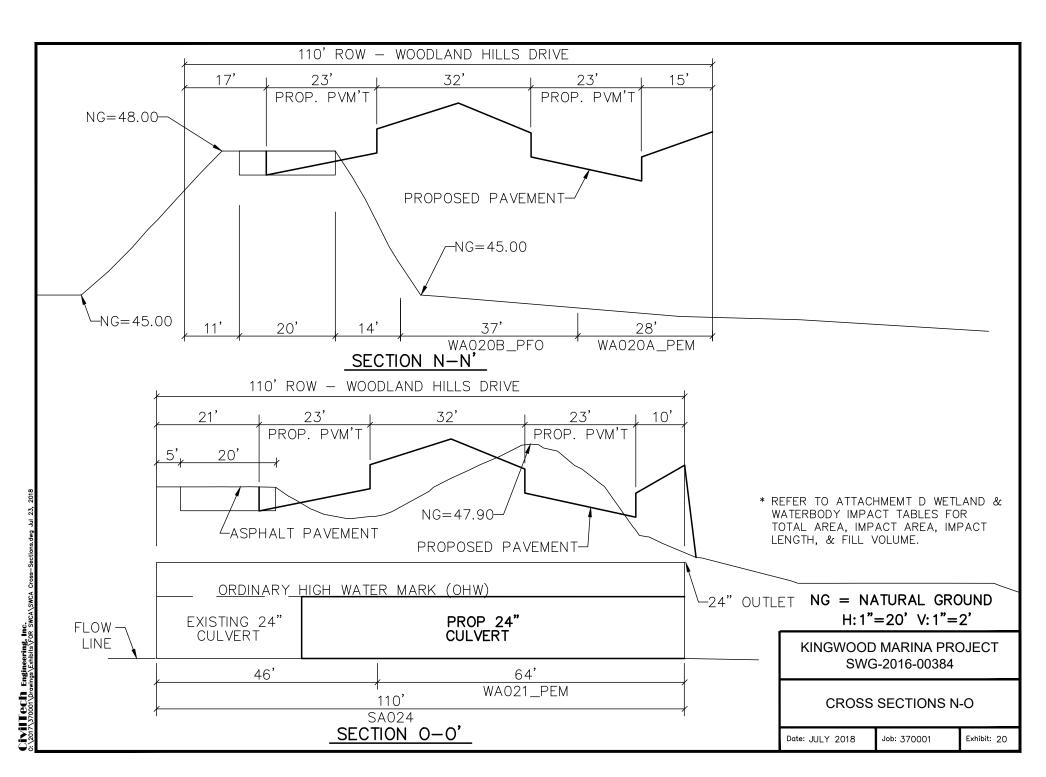
KINGWOOD MARINA PROJECT SWG-2016-00384

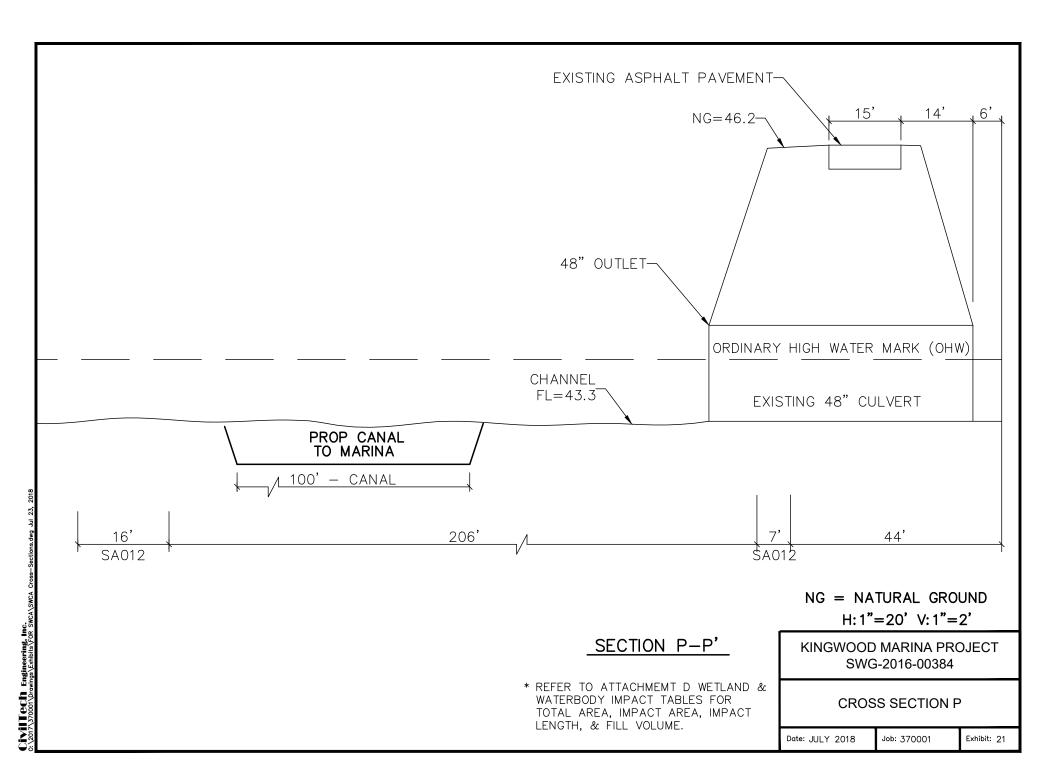
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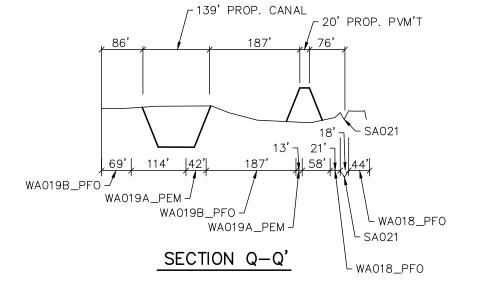
Date: JULY 2018

Job: 370001









\* REFER TO ATTACHMEMT D WETLAND & WATERBODY IMPACT TABLES FOR TOTAL AREA, IMPACT AREA, IMPACT LENGTH, & FILL VOLUME.

NG = NATURAL GROUND H:1"=200' V:1"=2'

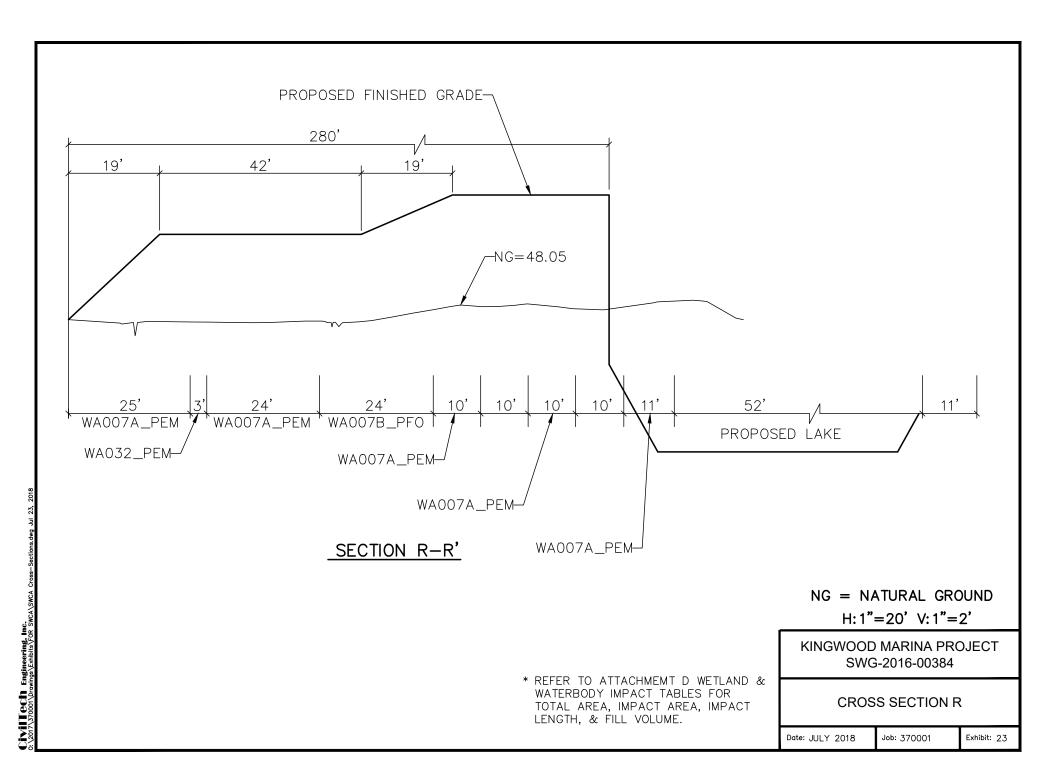
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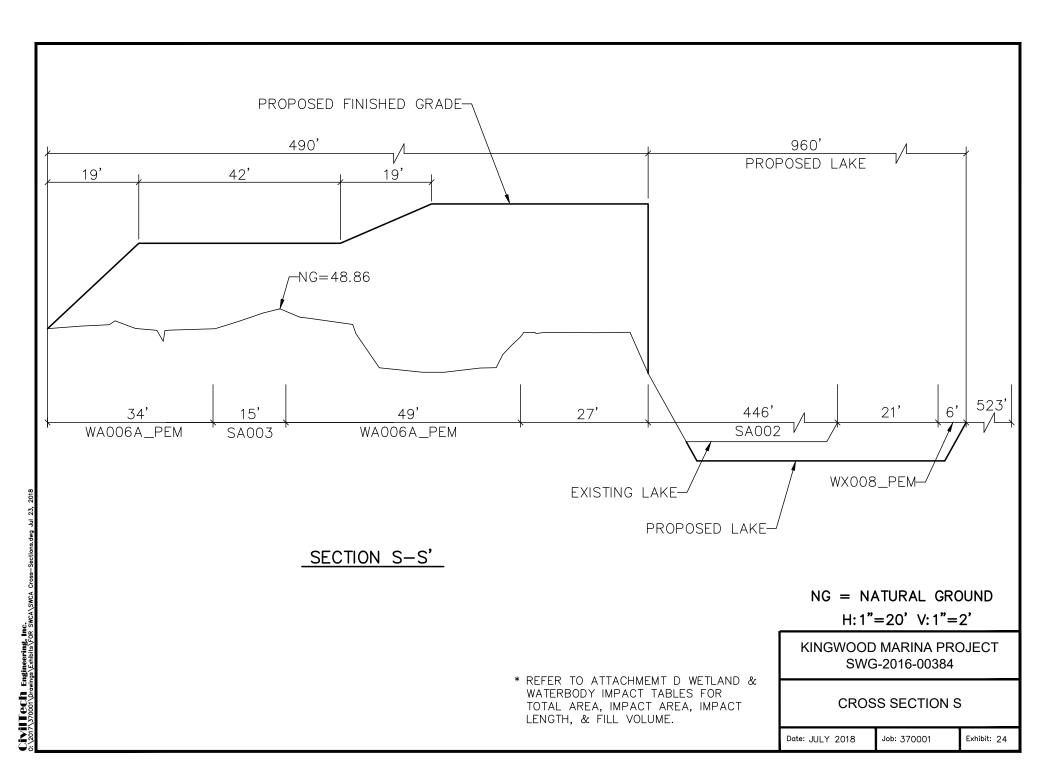
KINGWOOD MARINA PROJECT SWG-2016-00384

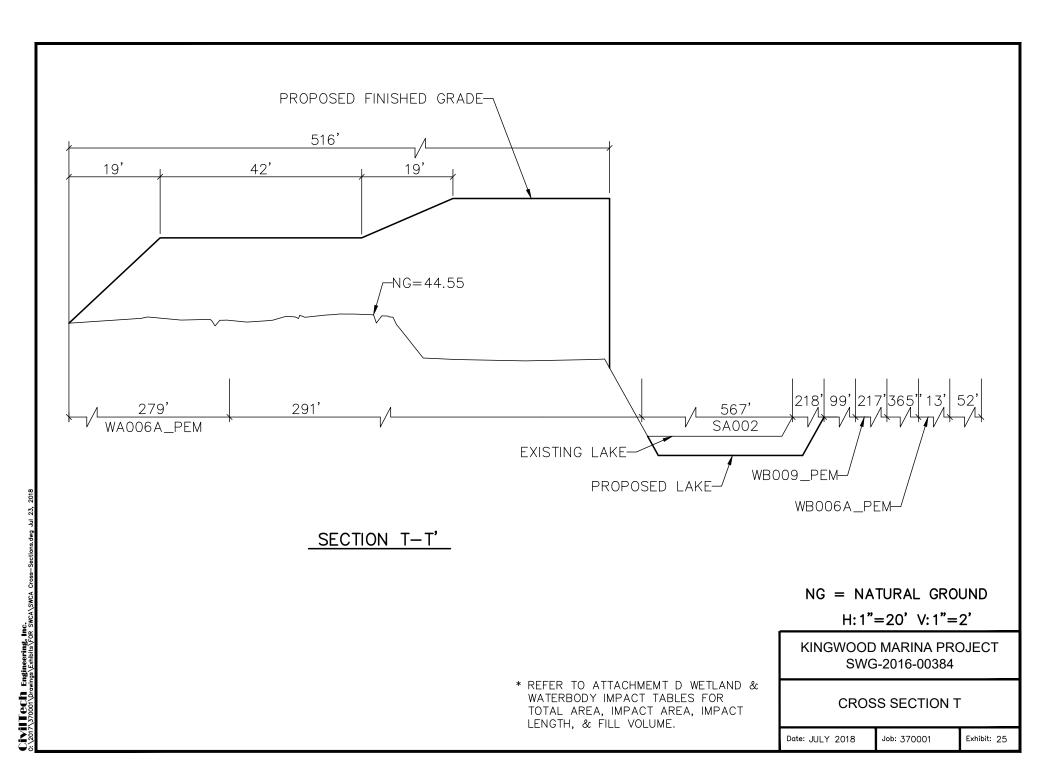
CROSS SECTION Q

Date: JULY 2018

Job: 370001







## KINGWOOD MARINA PROJECT SWG-2016-00384 WETLAND IMPACT TABLE

Updated July 2018

WETLAND ID TYPE		WETLAND DELINEATION SHEET NO. (ATTACHMENT E, FIGURE 4)	PERMIT DRAWINGS EXHIBIT NO. (ATTACHMENT C)	TOTAL AREA (ACRES)	IMPACT AREA (ACRES)	FILL VOLUME (CUBIC YARDS)
WA001A	PEM	10	10	0.057	-	-
WA001B	PFO	10	10	0.318	-	-
WA002	PEM	10	10	0.026	-	-
WA003	PEM	10	10	0.225	0.225	363
WA004	PEM	10	10	0.053	-	-
WA005	PEM	7	10	0.211	0.211	340
WA006A	PEM	6, 7	10, 24, 25	5.825	5.825	9398
WA006B	PFO	6, 7	10	0.520	0.520	839
WA007A	PEM	6	10, 23	2.296	2.296	3704
WA007B	PFO	6	10, 23	0.603	0.603	973
WA008	PEM	6	10	0.126	0.126	204
WA009	PEM	6	10	0.079	0.079	127
WA010A	PEM	5	8, 16, 17	0.308	0.206	332
WA010B	PFO	5	8, 16, 17	3.033	0.102	165
WA011	PFO	4, 5, 6	8	5.154	-	-
WA012	PEM	9	10	0.005	-	-
WA013A	PEM	9	8	0.054	-	-
WA013B	PFO	5, 9	8	0.200	-	-
WA014	PEM	5	8	0.019	-	-
WA015	PEM	5	8	0.042	-	-
WA016	PEM	9	10	0.388	-	-
WA017	PEM	9, 10	10	0.090	-	-
WA018	PFO	9	10, 22	0.069	0.010	16
WA019A	PEM	9	10, 22	0.284	0.110	177
WA019B	PFO	6, 9	8, 10, 22	1.695	0.366	591
WA020A	PEM	8	8, 19, 20	0.053	0.053	86
WA020B	PFO	8	8, 19, 20	0.206	0.206	332
WA021	PEM	8	8, 20	0.025	0.025	41
WA022	PFO	5	8	0.003	0.003	6
WA023A	PEM	1	4, 11	0.025	0.025	40
WA023B	PFO	1	4, 11	0.070	0.070	113
WA024A	PEM	1	4, 11	0.134	0.134	217
WA024B	PFO	1	4, 11	0.161	0.161	259
WA025A	PEM	1	4, 11	0.049	0.049	79
WA025B	PFO	1	4, 11	0.029	0.029	46
WA027A	PFO	2	4, 13	0.240	0.240	387
WA027B	PSS	2	4, 13	0.456	0.456	736
WA032	PEM	6	10, 23	1.155	1.155	1863
WB001A	PEM	3	6, 15	1.129	0.359	579
WB001B	PFO	3, 4	6, 15	8.288	3.854	6218
WB002	PFO	3	6, 15	0.476	0.288	465
WB003	PFO	3	6	0.120	0.053	85
WB004	PFO	3	6	3.131	1.901	3067
WB005	PFO	10	10	0.326	-	-
WB006A	PEM	10	10, 25	2.855	0.006	10
WB006B	PFO	10	10	1.141	-	-
WB007A	PEM	10	-	0.315	-	-
WB007B	PFO	10	-	0.161	-	-
WB008	PEM	10	10	0.220	0.220	355
WB009	PEM	10	10, 25	2.483	0.675	1090
WB010A	PEM	2, 4	4, 12, 14	0.431	-	-
WB010B	PFO	2, 4	4, 13, 14	19.263	12.463	20107

## KINGWOOD MARINA PROJECT SWG-2016-00384 WETLAND IMPACT TABLE

Updated July 2018

WETLAND ID TYPE		WETLAND DELINEATION SHEET NO. (ATTACHMENT E, FIGURE 4)	PERMIT DRAWINGS EXHIBIT NO. (ATTACHMENT C)	TOTAL AREA (ACRES)	IMPACT AREA (ACRES)	FILL VOLUME (CUBIC YARDS)
WB011	PFO	4	4	4.296	-	-
WB012A	PEM	2	4	0.020	0.020	32
WB012B	PFO	2	4	0.930	0.385	622
WB013A	PEM	2	4	0.119	-	-
WB013B	PFO	2	4, 14	15.509	8.193	13219
WB013C	PSS	2	4	0.115	0.115	185
WB014	PFO	2	4	0.168	0.084	136
WB015	PFO	2	4	0.766	0.117	188
WB016	PEM	4	4, 12	0.068	0.068	110
WB017	PSS	10	-	0.122	-	-
WB018	PFO	10	-	0.107	-	-
WB019	PFO	10	-	0.065	-	-
WX001	PEM	6	10	0.009	0.009	15
WX002	PEM	6	10	0.015	0.015	23
WX004	PEM	9	10	0.024	0.024	39
WX005	PEM	9	10	0.011	0.011	17
WX006	PEM	7, 10	10	0.133	0.133	215
WX007	PEM	7, 10	10	0.014	0.014	23
WX008	PEM	10	10, 24	0.049	0.049	79
WX009	PEM	7	10	0.004	-	-
WX011	PEM	7	10	0.008	0.008	13
TOTALS				87.177	42.349	68323

Calculation for fill volume is based on the following formula: 43,560 x acreage x depth/27 (wetland depth of 1' assumed)

## KINGWOOD MARINA PROJECT SWG-2016-00384 WATERBODY IMPACT TABLE

Updated July 2018

WATERBODY ID	WETLAND DELINEATION SHEET NO. (ATTACHMENT E, FIGURE 4)	PERMIT DRAWINGS EXHIBIT NO. (ATTACHMENT C)	TOTAL AREA (ACRES)	TOTAL LENGTH (FT. US)	FILL VOLUME TEMPORARY (CUBIC YARDS)	FILL VOLUME PERMANENT (CUBIC YARDS)	LENGTH (FT. US) TEMPORARY STREAMS IMPACTS	LENGTH (FT. US) PERMANENT STREAMS IMPACTS
SA001	10	10	0.543	480.3	-	-	-	-
SA002	6, 7, 9, 10	10, 24, 25	15.063	N/A	-	-	-	-
SA003	6, 7	10, 24	0.384	1047.0	-	-	-	-
SA005	7, 10	10	0.388	1357.2	-	-	-	-
SA008	5	8, 16, 17	0.185	1309.5	-	11	-	110.0
SA009	5, 6, 9	8	16.500	N/A	1	1	-	-
SA010	6	8	0.783	N/A	1	ı	-	-
SA011	9	8	0.011	87.2	-	-	-	-
SA012	6, 9	8, 10, 21	0.052	374.8	-	-	-	-
SA013	4, 5, 6	4, 8	0.578	3008.3	-	-	-	-
SA014	6	8	0.003	63.7	-	-	-	-
SA021	9	10, 22	0.009	100.0	-	-	-	-
SA022	8	8, 18	0.112	133.1	-	181	-	133.1
SA023	8	8, 19	0.009	100.9	-	8	-	53.6
SA024	8	8, 20	0.011	114.9	-	5	-	70.0
SA026	2	4	0.026	205.4	-	-	-	-
SA027	2	4, 13	0.117	723.9	-	25	-	62.9
SA028	2	4, 13	0.013	121.7	-	-	-	-
SA029	2	4	0.009	120.6	-	-	-	-
SA030	2	4	0.157	458.0	_	-	_	_
SA031	2	4, 13	0.048	440.5	-	-	-	-
SA032	2	4	0.011	166.0	_	-	_	_
SA033	2	4	0.004	95.1	_	-	_	_
SA034	2	4	0.005	74.8	_	-	_	_
SA035	2	4	0.009	378.3	_	-	-	_
SB001	3	6	0.011	93.1	_	_	_	_
SB002	3	6	0.053	275.8	_	_	_	_
SB003A	2	4	0.071	350.2	_	_	_	_
SB003B	2	4	0.062	219.8	_	_	_	_
SB004	2	4	0.018	352.5	_	_	_	_
SB004	10	10	0.178	N/A	-	-	-	_
SB010	2	4	0.107	N/A	-	_	-	-
SB010	4	4	0.059	438.9	_	_	_	_
SB011B	4	4	0.005	102.2	-	-	-	_
SB012	4	4, 15	0.067	536.2	-	27	-	120.0
SB012	2	4	0.017	221.6	-	27	-	221.6
SB014A	2	4, 14	0.179	1125.3	_	-	_	-
SB014B	2	4	0.034	203.5	-	-	-	-
SB015	10	-	0.958	1085.3	-	-	-	-
SX031	10	-	0.001	0.0	_	-	_	_
TOTALS	10	1	36.850	15966	0	285	0	771